

Alessandro Fassò – Short CV

May 2013

Alessandro Fassò, 55, is full professor of *Statistics* from 2000 at *Department of Engineering* of the University of Bergamo, where has been serving as associate professor since 1998, as director of *Dept. of IT and Mathematical Methods* (2007-2012) and as member of *Academic Senate* (2009-2012). Before that, he has been researcher of Statistics at the *Catholic University of Milan* since 1987. In 1983 he got Laurea degree in Statistics at University of Padua.

Member of the Council of the *International Statistical Institute (ISI)* 2013-2017, member and past Secretary (2008-2011) of *The International Environmetrics Society (TIES)*, member of the *Italian Statistical Society (SIS)* and co-founder of the Italian research group on environmental statistics *GRASPA*. Member of WG-GRUAN, the Working Group on Global Climate Observing System (GCOS) Atmospheric Reference Observations. Member of Lelio Pagani Centre for Territorial Studies.

Associate Editor and Conference Organizer He is AE of *Advances in Statistical Analysis (AStA)*, of *Statistica e Applicazioni (S&A)* and of *Statistica & Società*. He has been Guest Editor of *Environmetrics* and *Advances in Statistical Analysis (AStA)*.

Member of many conference scientific committees, the latter being SIS 2013, TIES 2012, Hyderabad, and Spatial 2, Baia delle Zagare, 2011.

Invited speaker and invited session organizer in a number of conference, especially in environmental statistics, for example: keynote speaker at EURISBIS 2009; organizer of the forthcoming GRASPA special track on “*Space and space-time models: methods and environmental applications*” at SIS-2013, Brescia, 19-21 June, 2013, and the last two sessions on “*Short and Long Term Forecasting of Avalanche Hazard*” at ISI-2011, Dublin, August 21-26, 2011, and on “*Environmetrics*” at ICCSS-12, Doha, December 19-22, 2012.

Phd board and Post-doc lecturer: Foreign Faculty member board of PhD program in Statistics at the University of Valparaiso; Faculty member of PhD program in Statistics and Applications at University of Milano Bicocca and the PhD program in Mechatronics, Information, New technologies and Mathematical Methods at University of Bergamo.

Winter school Lecturer on “Stochastic models for spatio-temporal data: Inference and applications” at XI. Workshop Stochastic Models and their Applications, Hamburg 20-22 February 2013.

Short course Lecturer on *Spatio-Temporal Modeling for Environmental Data* at 25th International Conference on Statistical Modelling, 25-28 March, 2013.

Research interests: He is Author of more than eighty papers mainly on statistical methods and applications to environmetrics, air quality, climate variables, sensitivity analysis of environmental models, environmental time-series, spatio-temporal data, stochastic monitoring, industrial statistics and structural and geotechnical surveillance, quality control and financial time series analysis.

Climate Variables. In particular with regard to climate variables and the related remote sensing vertical profiles, recently, he is contributing to the understanding of colocation uncertainty using a statistical approach based on heteroskedastic functional regression models. This extends the standard functional regression approach and allows a natural definition of uncertainty profiles and their detailed decomposition into all the different components.

Air quality dynamic models. Previously, A. Fassò contributed to air quality monitoring and understanding. Considering air quality monitoring, he developed multivariate spatio-temporal models for particulate matters and nitrogen oxides based on ground level heterogeneous monitoring networks, computer outputs and satellite data, developing methods for statistical dynamic mapping, risk assessment, human exposure distribution and environmental policies assessment. His approach allows for multiple pollutants, observed in different places and with different spatial scale, with a large number of “structural missing data”. The approach covers data from single regional areas to large dataset at the European level. Moreover, he discussed air quality indexes in the frame of heterogeneous and unbalanced monitoring networks and model based indexes. He proposed some nonlinear models for Ozone time series, discussed monitoring of nuclear plumes and methods for extreme air pollution.

Water quality. Considering water problems he contributed to simulation, uncertainty and sensitivity analysis for waste water, recreational water and catchment temporary dry up.

Principal/Co-principal investigator of many research projects of local, regional and national relevance. The list of recent ones follows:

Period: 2011-2012

Funding: Regione Lombardia

Project: AQ2009-EN17

Subject: Methods for the integration of renewable energy sources and satellite monitoring of the environmental impact

WEB: <http://www.data.unibg.it/dati/bacheca/224/47381.PDF>

Budget: 850'000€

Period: 2007-2009

Funding: Italian Research and University Ministry

Project: Relevant National Project (PRIN-2006).

General Subject: Statistical analysis and modelling of impact and risk for environmental phenomena in space and time

WEB: http://www.ricercailiana.it/prin/dettaglio_completo_prin_en-2006131039.htm

Budget: 260'000€

Period: 2006-2008

Funding: Regione Piemonte

Project: APQ 2004

Subject: Statistical methods and spatio-temporal models for air-quality monitoring

Local Budget: 55'000€

Period: 2005-2009

Funding: Field Srl, SisgeoSrl

Subject: Statistical monitoring of geotechnical and engineering structures

Budget: 60'000€

Period: 2005-2006

Funding: Italian Research and University Ministry

Project: Relevant National Project (PRIN-2004)

Subject: Space-time modelling and uncertainty of the measures in environmental data analysis

Web: http://www.ricercailiana.it/prin/dettaglio_prin_en-2004137478.htm

Local Budget: 61'000€

RECENT PUBLICATIONS of A. FASSÒ
March 2013

1. Fassò A., Pollice A., Cafarelli B (2013). Spatial statistics for environmental studies. *AStA Advances in Statistical Analysis*: Vol. 97, Issue 2.
2. Fassò A (2013) Statistical assessment of air quality interventions. *Stochastic Environmental Research and Risk Assessment*. On-line first DOI: 10.1007/s00477-013-0702-5.
3. F. Finazzi, M.E. Scott, A. Fassò (2013). A model based framework for air quality indices and population risk evaluation. With an application to the analysis of Scottish air quality data. *Journal of the Royal Statistical Society, series C*. Vol.62(2): 287-308.
4. Finazzi F, Fassò A (2012) DSTEM - A statistical software for multivariate space-time environmental data modeling. In Goncalves A.M. et al. (Ed's 2012), *Proceedings of the International Workshop on Spatio-Temporal Modelling (METMA VI)*. Guimaraes, 12-14 September 2012. ISBN 978-989-97939-0-3.
5. Gardiner T, Madonna F, Wang J, Whiteman DN, Dykema J, Fassò A, Thorne P, Bodeker G. (2012) Sampling and Measurement Issues in Establishing a Climate Reference Upper Air Network. *Proceedings of ITS*, The International Temperature Symposium. Accepted.
6. A. Fassò and G. Arduino (2012). Environmental regulation in the European Union in *Encyclopedia of Environmetrics Second Edition*, A.-H. El-Shaarawi and W. Piegorsch (eds). John Wiley & Sons Ltd, Chichester, UK, pp. 886-889. DOI: 10.1002/9780470057339.vnn014.
7. Fassò A. (2012). Sensitivity analysis of computer models in *Encyclopedia of Environmetrics Second Edition*, A.-H. El-Shaarawi and W. Piegorsch (eds). John Wiley & Sons Ltd, Chichester, UK, pp. 2420-2427. DOI 10.1002/9780470057339.vas015.pub2.
8. Fassò A. (2012). Sensitivity analysis of statistical models in *Encyclopedia of Environmetrics Second Edition*, A.-H. El-Shaarawi and W. Piegorsch (eds). John Wiley & Sons Ltd, Chichester, UK, pp. 2427-2433. DOI: 10.1002/9780470057339.vnn168.
9. Fassò A, Finazzi F, Bevilacqua M (2011) Tapering spatio temporal models. In Cafarelli Ed. (2011) *Spatial Data Methods for Environmental and Ecological Processes – 2nd Edition*, Foggia, Sept. 1-2, 2011. ISBN: 978-88-96025-12-3. Anche in Grasp WP-2011, www.grasp.org, ISSN: 2037-7738.
10. Finazzi F, Fassò A, (2011) Spatio-temporal modeling and remote sensing for a common European air quality assessment method. *Proceedings of From Space to Earth conference*. Venice, March 21-23, 2011. ISBN 978-88-8940-151-9.
11. Fassò A, Finazzi F, (2011) Maximum likelihood estimation of the dynamic coregionalization model with heterotopic data. *Environmetrics*. Vol. 22:6, 735-748. Online ISSN: 1099-095X. Published Online. DOI:10.1002/env.1123.
12. Fassò A, Finazzi F, (2010) 'Bayesian source detection and parameter estimation of a plume model based on sensor network measurements' by C. Huang et al.: Discussion. *Appl. Stochastic Models Bus. Ind.* Vol. 26. 349–352. Online ISSN: 1526-4025. DOI: 10.1002/asmb.855.
13. Fassò, A., Cameletti M. (2010) A unified statistical approach for simulation, modeling, analysis and mapping of environmental data. *Simulation: Transactions of the Society for Modeling and Simulation International*. Vol. 86, 3, pp 139–154. ISSN: 0037-5497. Online published on June 29, 2009 as doi:10.1177/0037549709102150.

14. Fassò, A., Cameletti M. (2009) The EM algorithm in a distributed computing environment for modelling environmental space-time data, *Environmental Modelling & Software*, 24, pp. 1027-1035. ISSN: 1364-8152.
15. Nicolis O., Fassò A., Mannarini G. (2008). AOT calibration by spatio-temporal model in northern Italy. In Cocchi D., Mateu J., Montes F., Otranto E., Porcu E., Usai A., (2008) *Statistics for spatio-temporal modelling*. Proceeding of the 4th Int. Workshop on Spatio-Temporal Modelling, Alghero 24-26 Sept. 2008. pp 327-331. ISBN: 88-6025-098-6
16. Bodnar O., Cameletti M., Fassò A., Schmid W. (2008) Comparing air quality in Italy, Germany and Poland using BC indexes. *Atmospheric Environment*. Volume 42, Issue 36, November 2008, Pages 8412-8421.
17. Fassò A. (2007) Statistical sensitivity analysis and water quality. In Wymer L. Ed, *Statistical Framework for Water Quality Criteria and Monitoring*. Wiley, New York. 211-230. ISBN: 978-0-470-03372-2. Also in GRASPA Working Paper n.23. (www.graspa.org).
18. Fassò A., Locatelli S. (2007) Asymmetric Monitoring of Multivariate Data with Nonlinear Dynamics. *AstA - Advances in Statistical Analysis*. Vol.91:1, 23-27.